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May 6, 1991

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Maria E. Gonzalez
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 5
230 South Dearborn Street
Chicago, Illinois 60604

Re: Hi-Mill Manufacturing Company
Phase II Work Plan
Vertical Profiling; Dispute Resolution Request.

Dear Ms. Gonzalez:

The U.S. Environmental Protection Agency (EPA) and the Michigan Department of Natural Resources (MDNR) have issued comments on Hi-Mill's proposed Phase II Hydrogeologic Investigation Work Plan. Those comments were discussed by telephone conference on Tuesday, April 30, 1991. EPA, MDNR and Hi-Mill were represented during that telephone conference. Except for the vertical profiling issue, all comments were resolved between EPA, MDNR and Hi-Mill and a revised work plan will be submitted on or before May 15, 1991. On the specific issue of vertical profiling, please consider this as a formal request for dispute resolution in accordance with Section XIX of the Administrative Order By Consent, effective date October 5, 1988.

In its review of the Work Plan, EPA and MDNR requested that vertical profiling be incorporated into the plan in areas east and west of the Hi-Mill facility. The comments of EPA and MDNR indicated that vertical profiling of the intermediate aquifer was necessary to:

1. observe impacts from former operations at the Hi-Mill facility in the intermediate aquifer;

2. determine appropriate screen position for the monitoring wells installed in the intermediate aquifer during Phase II of the investigation;

3. further investigate the area in vicinity of Monitoring Well SW-18 to determine whether a connection exists between Target Pond and the intermediate aquifer; and

4. efficiently utilize the drill rig during Phase II of the investigation rather than contemplate a third phase to the investigation.

Hi-Mill responded by providing technically-sound arguments for not employing the vertical profiling during Phase II of the investigation. The arguments were relayed to EPA and MDNR during the April 30, 1991 telephone conference. Those arguments are as follows:

1) Vertical Sampling of the Intermediate Aquifer to define the impacts from former Hi-Mill operations.

The EPA and MDNR cited detectable chromium concentration in intermediate Monitoring Wells IW-1 and IW-3 during the first and only sampling round as a reason to vertically profile the intermediate aquifer. Also cited as a reason was detectable concentrations of trichloroethylene (TCE) and dichloroethylene (DCE) by the Michigan Department of Public Health ("MDPH") in the former Hi-Mill production wells screened in the intermediate and deep aquifers.

The chromium concentrations reported by Wilson Laboratories for Monitoring Wells IW-1 and IW-3 were 20.70 ug/L and 16.00 ug/L, respectively. However, each of the above results are qualified as U,J. These qualifiers indicate that chromium is detected in the associated blank, in this case the preparation or reagent blank, at 10ug/L. Therefore, there exists the probability that the groundwater sample results for chromium from IW-1 and IW-3 are influenced by this blank contamination.

According to the EPA Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, July, 1988, sample results >IDL (instrument detection limits) but <5 times the amount in any blank should be qualified as non-detected (U). In this case, the chromium concentrations cited by the MDNR were roughly two (2) times the amount in the reagent blank and, therefore, may not be representative of actual concentrations. The 1988 CLP Statement of Work for Inorganics Analysis recommends that samples affected in the above manner be redigested and reanalyzed for the effected analyte.

Hi-Mill would like to complete the second round of groundwater sampling and review the analytical results before initiating any vertical profile sampling. If the results warrant implementation of vertical profiling, the appropriate locations and procedures can be discussed with the EPA and MDNR at that time.

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The (MDPH) detected and reported TCE and DCE concentrations in the samples collected from the two production wells at the Hi-

Mill facility during a seven (7) month study conducted in 1988. However, poor documentation records suggest that the samples may not be representative of the water quality from the production wells. No background samples, field blanks, or trip blanks were analyzed; and no laboratory quality assurance data is available to assess the validity of the results. Based on the non-validated analytical results, the MDPH instructed Hi-Mill to provide bottled water to its employees and later required them to abandon the two production wells.

Techna Corporation, an environmental consulting firm, designed and implemented a limited hydrogeological assessment of the Hi-Mill site in November 1988 in response to the MDPH findings of chlorinated solvents in the Hi-Mill production wells. Techna installed six (6) temporary 2-inch PVC monitoring wells and collected soil and ground- water samples which were submitted to a certified laboratory. No contaminants were found in any of the samples. One (1) of the six (6) temporary monitoring wells set by Techna in their 1988 study was installed in the west corner of the Hi-Mill property, 56 feet below grade in the intermediate aquifer. The well was properly developed, sampled, and analyzed; no evidence of chlorinated solvents was detected. This west corner of the Hi-Mill facility is one of the locations that the EPA and MDNR would like to vertical profile.

Based on the distance between the production wells (approximately 300 feet), the low concentration of chlorinated solvents detected in the production wells, and the lack of solvent contamination in surficial soils near the wells, Techna concluded the impacts observed by the MDPH were caused by migration of solvents from localized surface spill(s) into the ground water via the annular spacing surrounding the wells. Additionally, the MDPH sample results can not be validated and the two (2) potential migratory pathways of the solvents to the intermediate aquifer have been eliminated by pressure sealing with grout.

2) Determine the appropriate screen position for the monitoring wells to be installed in the intermediate aquifer during Phase II of the investigation.

In the March 7, and April 15, 1991, Phase II Work Plan review comments, the MDNR has suggested that Hi-Mill vertically profile the intermediate aquifer and analyze the ground-water samples on-site with a portable gas chromatograph to determine the appropriate screened interval for the monitoring wells installed in the intermediate aquifer. This MDNR request is inconsistent with previously approved EPA policies. The inconsistencies are discussed below.

Both the EPA and the MDNR approved the intermediate well construction procedures specified in the Techna Work Plan and later employed by Techna during the Phase I Investigation. However, with no data to support their suspicions of potential impact to the intermediate aquifer, and no guarantees of detecting contamination, they abandoned the criteria they used to approve the Phase I Work Plan and are now insisting on implementing a more costly alternative when site conditions have not changed. At this time in the investigation, the request for vertical profiling appears to be an investigative search tool rather than a plume delineation technique.

The EPA has stated that the analytical results obtained from the field gas chromatograph (GC) will not be used in any Remedial Investigation decisions. However, the MDNR wants to use the GC results to ensure the monitoring wells screens are set in the appropriate interval. Although utilization of the GC during the vertical profiling will decrease analytical costs, it creates several issues of concern. The first issue is where will the monitoring wells be set if no impacts are discovered in the aquifer? Second, what if the GC generates false positive results in any of the samples run for a volatile organic headspace analysis? Does Hi-Mill need to confirm the GC results with a certified Contract Laboratory Program (CLP) analysis? Third, are the requested metals analysis to be performed on-site also?

3) Further investigation at the intermediate aquifer in the vicinity of monitoring well SW-18.

In their March 7, and April 15, 1991, review comments, the MDNR referenced a window in the confining clay layer east of the Target Pond. Although the boring logs indicate the clay layer to be thinning to the east, there is no indication that it is not present in that area. The MDNR believes that this window is a potential migratory pathway to the intermediate aquifer and that it should be vertically sampled to determine any impacts.

The results of the Phase I Hydrogeologic Investigation indicated that the contaminants associated with the Hi-Mill site (metals and chlorinated solvents) have a very limited migration route to the area located on the far east side of Target Pond in the vicinity of monitoring well SW-18. Based on the ground-water flow directions identified at the site and the natural drainage patterns for surface water bodies surrounding the site, there is no evidence to suggest that ground water impacted by the former Hi-Mill operations would migrate in an easterly direction to the far east side of Target Pond.

The portion of shallow ground water that flows east from the Hi-Mill facility is intercepted by Target Pond. The water in the

pond is then evaporated, utilized by plants, lost to vertical seepage, or discharged under Highway M-59 to the north of the Hi-Mill facility. Only the surface water which is recharged by vertical seepage to ground water from Target Pond would have impacted the area proximal to monitoring well SW-18. However, given the low seepage velocity of the clay layer, the westerly drainage (under M-59 to the north) of Target Pond, the high volatility of the organic constituents identified at the site, and the high absorption affinity of the metals at the site, it is improbable that any impact would be detected in the intermediate aquifer east of Target Pond. Even if a breakthrough did occur, the location would be upgradient of the intermediate wells installed directly east of the Hi-Mill facility.

Hi-Mill has proposed installing piezometers in the area between Target Pond and Waterbury Lake to confirm that the two surface water bodies are not hydraulically connected. If the static water levels collected from the piezometers show that a southern groundwater flow direction from Target Pond to Waterbury Lake exists, additional investigation in that area may be warranted. The second round of groundwater samples collected from the existing monitoring wells during the Phase II investigation will also assist in determining if a potential problem exists on the east side of Target Pond.

4) Efficiently utilize the drill rig during Phase II of the investigation rather than contemplate a third phase in the Remedial Investigation.

During the April 30, 1991, telephone conference call, representatives of MDNR said that if vertical profiling was conducted during the Phase II Investigation and no impacts were detected in the intermediate aquifer, they still might require additional investigation activities. The MDNR comment made during the conference call suggests that a Phase III Investigation may be inevitable regardless of whether or not impacts are detected in Phase II.

At this point in the investigation, Hi-Mill does not believe that vertical sampling of the intermediate aquifer is justified at this time. The first round of ground-water samples collected from the site gave no indication that the intermediate aquifer was impacted by former plant operations. The Phase II investigation proposes additional monitoring wells to be installed in the intermediate aquifer to further examine the water quality of that aquifer. If ground-water samples collected from the existing or additional intermediate wells during the second sampling event reveal the intermediate aquifer is impacted, vertical profiling may be justified and the profile intervals may be properly designed. However, initiating vertical profiling of the aquifer prior to

identifying any impact in the aquifer seems unwarranted. Vertical profiling is also an expensive technique. Depending on the analytical (GC or CLP) preference and drilling technique employed, cost estimates of up to $25,000 per profile have been developed.

Should you have any questions, please feel free to contact me at (313) 225-7042.

Very truly yours,

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Robert Charles Davis

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